OIPE
JUN 27 2005
PATENT & TRADEMARK OFFICE

FIG 1

segment 16-bit thermometer code	binary output code		decimal code	segment number of the segmented thermometer code
segment number p=3 p=2 p=1 p=0				p
MSB (MSS) (LSS) LSB	MSB	LSB		
0000 0000 0000 0001	00	00	0	00 (0)
0000 0000 0000 0011	00	01	1	
0000 0000 0000 0111	00	10	2	
0000 0000 0000 1111	00	11	3	
0000 0000 0001 1111	01	00	4	01 (1)
0000 0000 0011 1111	01	01	5	
0000 0000 0111 1111	01	10	6	
0000 0000 1111 1111	01	11	7	
0000 0001 1111 1111	10	00	8	10 (2)
0000 0011 1111 1111	10	01	9	
0000 0111 1111 1111	10	10	10	
0000 1111 1111 1111	10	11	11	
0001 1111 1111 1111	11	00	12	11 (3)
0011 1111 1111 1111	11	01	13	
0111 1111 1111 1111	11	10	14	
1111 1111 1111 1111	11	11	15	

FIG 2

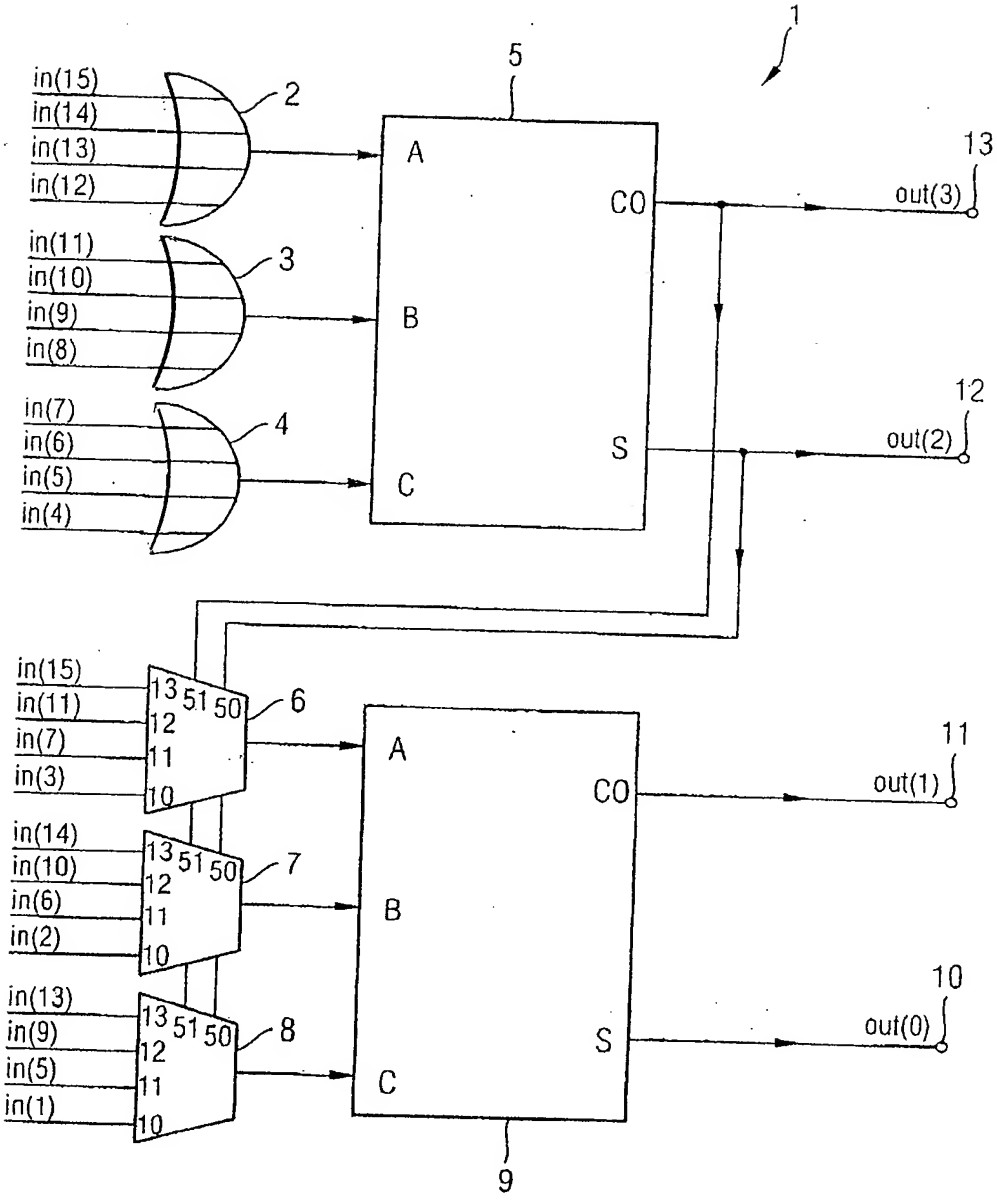
1
5
in(15)
in(14)
in(13)
in(12)
2
A
CO
13
out(3)
in(11)
in(10)
in(9)
in(8)
3
B
in(7)
in(6)
in(5)
in(4)
4
S
12
out(2)
C
in(15)
in(11)
in(7)
in(3)
13 51 50
12
11
10
6
A
CO
11
out(1)
in(14)
in(10)
in(6)
in(2)
7
B
in(13)
in(9)
in(5)
in(1)
8
S
10
out(0)
C
9

FIG 3

segmented 16-bit thermometer code	determined value of the decimal code	correct value of the decimal code	segment number of the segmented thermometer code
segment number p=3 p=2 p=1 p=0			p
MSB (MSS) (LSS) LSB	MSB LSB		
0000 0000 0000 0001	0	0	00 (0)
0000 0000 0000 0010	1	1	
0000 0000 0000 0101	1	2	
0000 0000 0000 1011	2	3	
0000 0000 0001 0111	4	4	01 (1)
0000 0000 0010 1111	5	5	
0000 0000 0101 1111	5	6	
0000 0000 1011 1111	6	7	
0000 0001 0111 1111	8	8	10 (2)
0000 0010 1111 1111	9	9	
0000 0101 1111 1111	9	10	
0000 1011 1111 1111	10	11	
0001 0111 1111 1111	12	12	11 (3)
0010 1111 1111 1111	13	13	
0101 1111 1111 1111	13	14	
1011 1111 1111 1111	14	15	

FIG 4

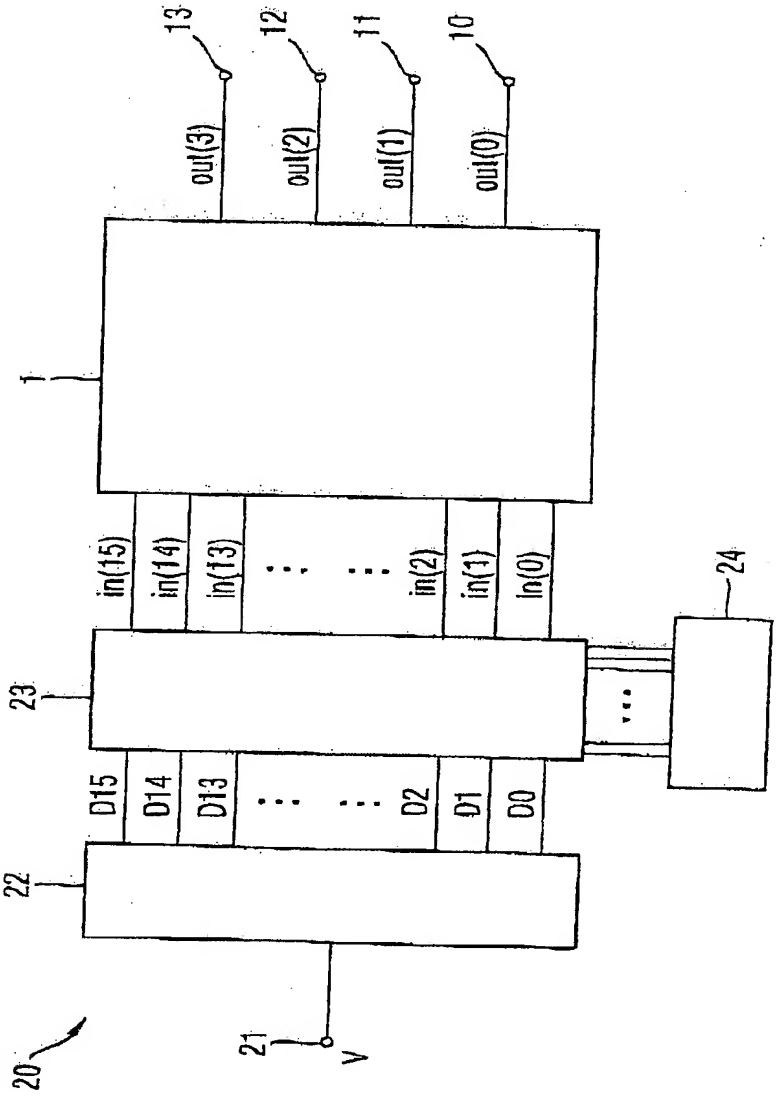
13
12
11
10
out(3)
out(2)
out(1)
out(0)
1
in(15)
in(14)
in(13)
in(2)
in(1)
in(0)
24
23
D15
D14
D13
D2
D1
D0
22
21
V
20

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FIG 1

segment 16-bit thermometer code	binary output code	decimal code	segment number of the segmented thermometer code
segment number p=3 p=2 p=1 p=0			p
MSB (MSS) (LSS) LSB	MSB LSB		
0000 0000 0000 0001	00 00	0	00 (0)
0000 0000 0000 0011	00 01	1	
0000 0000 0000 0111	00 10	2	
0000 0000 0000 1111	00 11	3	
0000 0000 0001 1111	01 00	4	01 (1)
0000 0000 0011 1111	01 01	5	
0000 0000 0111 1111	01 10	6	
0000 0000 1111 1111	01 11	7	
0000 0001 1111 1111	10 00	8	10 (2)
0000 0011 1111 1111	10 01	9	
0000 0111 1111 1111	10 10	10	
0000 1111 1111 1111	10 11	11	
0001 1111 1111 1111	11 00	12	11 (3)
0011 1111 1111 1111	11 01	13	
0111 1111 1111 1111	11 10	14	
1111 1111 1111 1111	11 11	15	

FIG 2

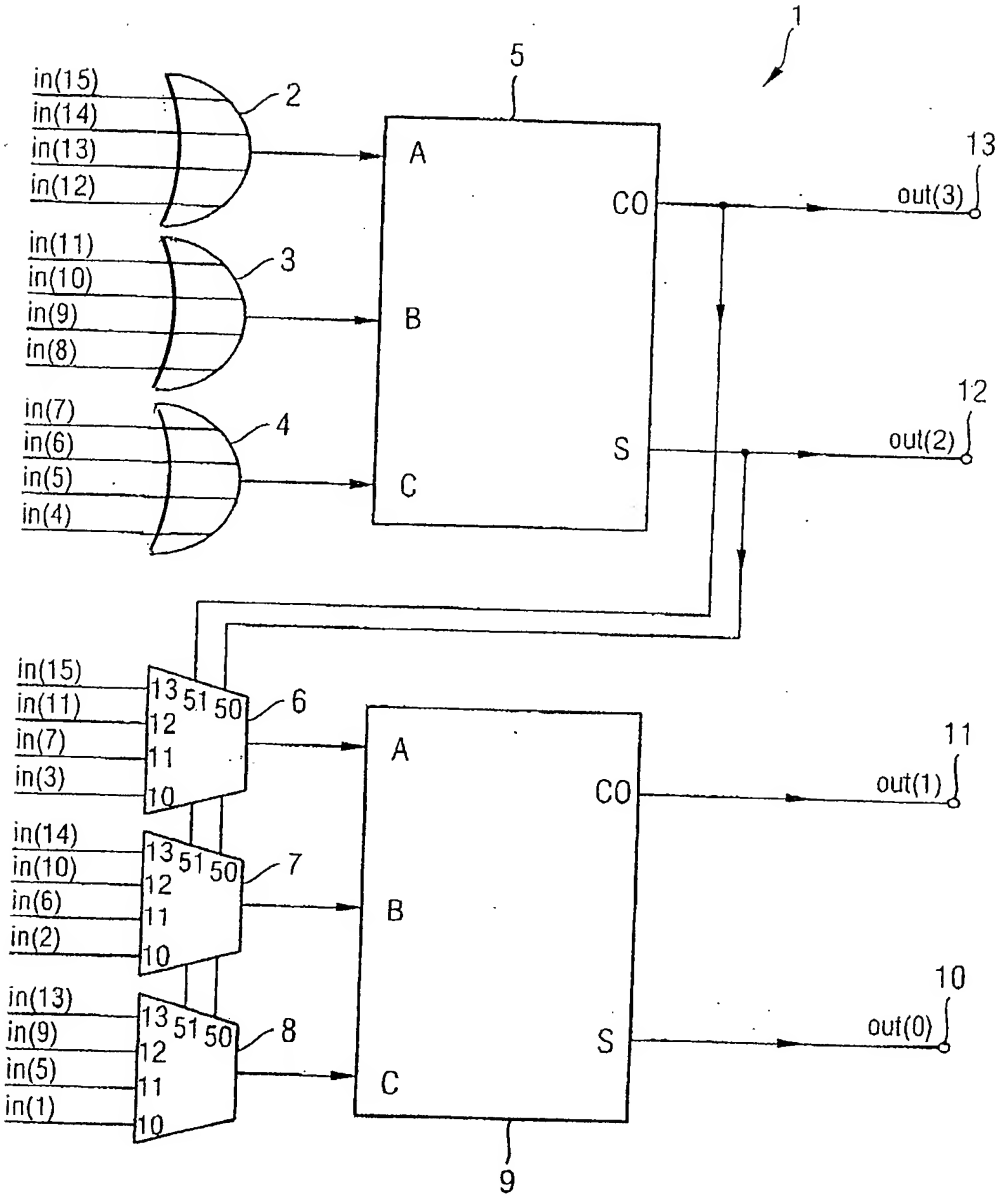
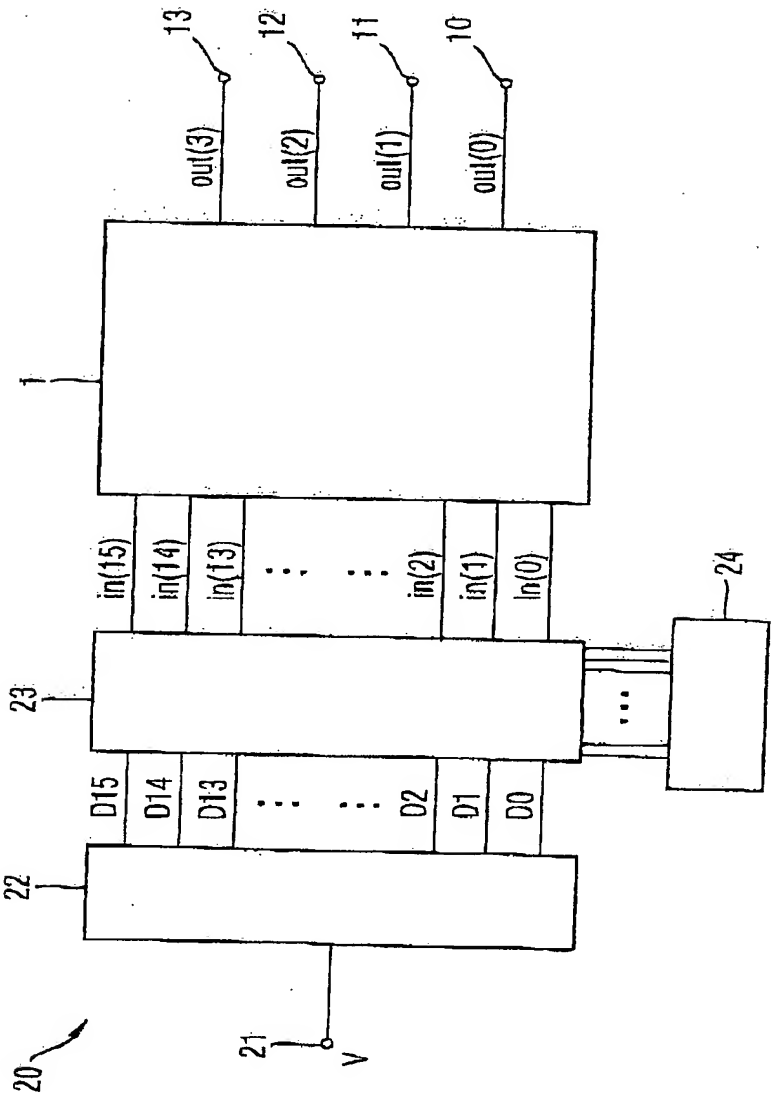

1
5
2
3
4
in(15)
in(14)
in(13)
in(12)
in(11)
in(10)
in(9)
in(8)
in(7)
in(6)
in(5)
in(4)
A
B
C
CO
S
13
out(3)
12
out(2)
6
7
8
in(15)
in(11)
in(7)
in(3)
in(14)
in(10)
in(6)
in(2)
in(13)
in(9)
in(5)
in(1)
13 51 50
12
11
10
11
out(1)
10
out(0)
9

FIG 3

segmented 16-bit thermometer code	determined value of the decimal code	correct value of the decimal code	segment number of the segmented thermometer code
segment number p=3 p=2 p=1 p=0			p
MSB (MSS) (LSS) LSB	MSB LSB		
0000 0000 0000 0001	0	0	00 (0)
0000 0000 0000 0010	1	1	
0000 0000 0000 0101	1	2	
0000 0000 0000 1011	2	3	
0000 0000 0001 0111	4	4	01 (1)
0000 0000 0010 1111	5	5	
0000 0000 0101 1111	5	6	
0000 0000 1011 1111	6	7	
0000 0001 0111 1111	8	8	10 (2)
0000 0010 1111 1111	9	9	
0000 0101 1111 1111	9	10	
0000 1011 1111 1111	10	11	
0001 0111 1111 1111	12	12	11 (3)
0010 1111 1111 1111	13	13	
0101 1111 1111 1111	13	14	
1011 1111 1111 1111	14	15	

FIG 4


13
12
11
10
out(3)
out(2)
out(1)
out(0)
1
in(15)
in(14)
in(13)
in(2)
in(1)
in(0)
24
23
D15
D14
D13
D2
D1
D0
22
20
21
V